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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Tiecheng A. Qiao, et al

RANDOM ARRAY OF MICRO-
SPHERES FOR THE ANALYSIS OF
NUCLEIC ACIDS

RCE of Serial No. 10/036,828

Filed 21 December 2001

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

Group Art Unit: 1634

Examiner: Betty J. Forman

I hereby certify that this correspondence is being
transmitted via facsimile today to the Commissioner
for Patents, P.O. Box 1450, Alexandria, VA 22313-
1450.

Carol A. Kukurudza
Carol A. Kukurudza
Date
October 11, 2004

DECLARATION UNDER 37 C.F.R. §1.131

We, Tiecheng A. Qiao, Krishnan Chari, and Douglas L. Vizard, declare that:

Tiecheng Qiao received a degree of Chemistry from the University of Rochester in 1995, and has been employed as a research scientist with Eastman Kodak Company since 1997 in research and development of new products;

Krishnan Chari received a Ph.D. in 1985 from Rensselaer Polytechnic Institute, and is a Senior Principal Scientist in the Research Laboratories of Eastman Kodak Company, where he has been employed for 19 years;

Douglas Vizard received a B.S. in Physics in 1966 from Worcester Polytechnic Institute, and a Ph.D. in Biophysics in 18972 from Penn. State University, and is a Principal Scientist at Eastman Kodak Company, where he has been employed since 1987;

we are co-inventors of the above-captioned patent application; and

we are familiar with the Office Action dated June 21, 2004, and the reference Guire et al., US Patent Application Publication 2003/0073086 A1, published April 12, 2003, and filed October 5, 2001, cited therein.

The claims in the above-identified application in which we are co-inventors, referred to herein as “the pending application,” reflect an invention conceived and reduced to practice before the filing of the application by Guire et al., as evidenced by the attached copied notebook pages from the notebook of co-inventor Tiecheng A. Qiao, Notebook BB7408; from the notebook of laboratory assistant Brian Kelly, working under the direction of Tiecheng Qiao, Notebook BB9618; and from the records of co-inventor Douglas Vizard. All work was done in the United States in Rochester, New York.

As shown in the attached copies of pages 131 and 132 of Notebook BB7408, on August 16, 2000, the idea of identifying biological samples by labeling a microarray with one or more optical barcode, contacting the microarray with a target biological sample, and detecting the labeled sample, as claimed in claims 1 and 21 of the pending application, was recorded. Various embodiments of this idea are shown in the figure entitled “Alternative Binding Protein Arrays” dated October 10, 2000, and the figure entitled “Universal Application of Random Bead Array” dated December 21, 2000, both from the notes of Douglas Vizard.

The microspheres, labeled with a colorant, were made by Tiecheng Qiao on February 13, 2001, as recorded on page 138 of Notebook BB7408. Preparation of a microarray using the microspheres, hybridization of the same to a DNA sample, and detection and identification of the sample were done in an experiment on March 9, 2001, as recorded on pages 139-141 of Notebook BB7408, and included a procedure for hybridization of DNA to the colored bead first performed on February 13, 2001, and recorded on page 136 of the same notebook.

Pages 56-58 of Notebook BB9618 show further work on June 26, 2001, wherein an oligonucleotide strand was dissolved, hybridized to a colored bead-labeled strip, conjugated, and imaged according to one method of the invention. This work was performed by Brian Kelley under the direction of Tiecheng Qiao.

Developmental work on the method continued, as evidenced by the October 24, 2001, notes of Douglas Vizard regarding imaging of the microspheres, and the December 7, 2001 image entitled “Spot Size from Pointilliste 96-well Prints,” showing spot size and resolution of the image dependent on the number of pixels used in the imaging system, also from Douglas Vizard’s notes.

Applicants note that preparation of the pending application was done in parallel with the above developmental work, and was started about June 4, 2001, with the Eastman Kodak Company patent department.

The work reflected in the attached pages provided herewith shows conception and reduction to practice of the claimed invention of the pending application, as set forth at least in independent claims 1 and 21, before the filing date of Guire et al.

The undersigned declares further that all statements made herein of the undersigneds' own knowledge are true and all statements made on information and belief are believed to be true. These statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 9/22/2004



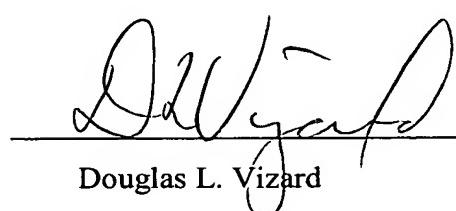
Tiecheng A. Qiao

Date: 9/21/2004



Krishnan Chari

Date: 9/28/2004



Douglas L. Vizard